REMARKS

Reconsideration and allowance of the application as amended is respectfully requested.

1. The Examiner has noted that claims 7, 8, 10, and 16-18 are rejected under 35 USC § 112. The problems pointed out by the Examiner have been corrected and other changes have been made to improve the clarity of the claims. No new matter has been added.

2. The Examiner rejected claims 1-4 and 10-18 under 35 USC § 103(a) as being unpatentable over Brewer. Brewer is a patent for a hammermill in which the claims are directed to the configuration of the hammermill shaft and the hammers that are attached to it. However, Brewer also discloses an "over load provision" with shear pins (84) shown in Fig. 1. The shear pins (84) shear off if the hammermill suddenly stops, thus protecting the motor.

3. However, if the hammermill were rotating at a high velocity, if it had a significant weight, or if both conditions were present, the shear pins (84) of the Brewer patent would only protect the motor from such a catastrophic failure. When the hammermill itself stopped, the energy of a heavy and rapidly rotating hammermill would not be dissipated by the shear bolts breaking. Those shear bolts would only protect the motor. They damage that would be done to the hammermill is that when the hammermill shaft is stopped instantly, the hammermill shaft itself could be bent or twisted, and the bearings holding it in place would likely be damaged or broken. These are problems that are experienced daily in heavy high speed hammermills and no one has previously solved this problem until the Applicant's design.

4. In a machine designed as described in the present application and defined by the current claims, when a catastrophic failure occurred, such as a hammer tip coming off and wedging into the cutter mechanism, thus instantly stopping the hammermill from turning, the shear plate

mounting would save the hammermill shaft and bearings. One example is when a ten pound hammer came off of a rotating hammermill. It jammed in the cutter device and instantly stopped the hammermill from rotating. The hammermill immediately broke the shear bolts in the shear plate from the force of the rotating hammermill. However, the hammermill shaft and the bearings holding it to the shear plate were not damaged. Thus, the repair was a fairly simple one, and did not require replacing the expensive hammermill shaft and bearings.

5. The Examiner has noted that claims 7 and 8 would be allowable if rewritten to overcome the §112 rejections and to include all of the limitations of the base claim. However, claim 7 claims both an upper and lower shear plate. This is an optional design to the basic configuration that involves one shear plate under a bearing. As the application was previously submitted, the claims were confusing in this area. A first shear plate was referred to, as well as a second shear plate. However, the drawings indicate that there are configurations in which one shear plate under each bearing is attached to another shear plate under each bearing. The claims have been rewritten to clarify this terminology so that the bearings are described as being attached to a lower shear plate and, in an alternate configuration as shown in Fig. 7, the bearings are attached to an upper shear plate that is itself attached to a lower shear plate. In configurations that involve a shaft supported by two bearings, the two bearings are referred to as first and second, thus some configurations have a first lower shear plate and a second lower shear plate. Other configurations have a first and second lower shear plate and a first and second upper shear plate, for a total of four shear plates. New claim 20 is a combination of claims 1-5, which have the limitation that the Examiner thought were patentable in his first reading of claim 7. New claim 21 is rewritten claim 6, which we believe to be patentable under the Examiner's previous analysis. New claim

22 is rewritten claim 7 to depend from new claim 21, which is claims 1-5.

6. Catastrophic failures of high speed heavy hammermills have been a problem for many years. The previous solution was to simply repair them when broken. Until the present invention, there was no way to save the hammermill shaft and its bearings from destruction. Since the implementation of this type of catastrophic failure protection, many hammermills have been saved from destruction over the past few months. A hammermill shaft and bearings cost between $4,000-$6,000. It takes approximately two weeks of labor to replace them. The desirability of preventing this type of damage is thus highly profitable. This need for solving the problem and the lack in the entire industry of a solution to the problem is a good indication that this solution is not an obvious one.

CONCLUSION

For all the reasons given above, applicants respectfully submit that the errors in the specification are corrected. Accordingly, applicants submit that this application is now in full condition for allowance, which action applicants respectfully solicit. If the Examiner feels it would advance the application to allowance or final rejection, she is invited to telephone the undersigned at the number given below.

DATED This 4th day of March 2004.

Very respectfully,

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